UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,337	11/25/2003	Il Nah	P24481	3926

7055 7590 08/23/2006

GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER	
KYLE, MICHAEL J	

ART UNIT	PAPER NUMBER
3677	

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/720,337
Filing Date: November 25, 2003
Appellant(s): NAH, IL

Bruce H. Bernstein
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 5, 2006, appealing from the Office action mailed June 3, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2,415,695	KANN	02-1947
4,902,180	GAURON	02-1990

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gauron (U.S. Patent No. 4,902,180) in view of Kann (U.S. Patent No. 2,415,695). With respect to claims 1 and 8, Gauron discloses an insert nut having a shape defined by a plurality of sidewalls (78, 90, 92, for example), and at least one circumferentially extending groove (84, 86, 88) along a longitudinal dimension of the insert nut. The plurality of sidewalls are configured to provide a

plurality of gaps (see figure 17) between the sidewalls of the insert nut and a surface of an installation hole of the carrier. Plastic is injectable into the plurality of gaps (via 94, 96) and into the at least one groove. Gauron also discloses a method of mounting the insert nut in an insert hole (figure 17). Gauron does not show the insert nut to have a polygonal shape.

Kann teaches an insert nut (11) of polygonal shape in order to secure the nut against turning (column 3, line 30). The insert nut forms a plurality of gaps between its sidewalls and the carrier, where the gaps extend along the entire length of the insert nut. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Gauron as taught by Kann in order to secure the nut against turning.

With respect to claims 2, 3, 9, and 10, Kann discloses the insert nut can have any of polygonal shapes, including a hexagon or pentagon (column 3, lines 2-4).

With respect to claims 4, 5, 7, 11, 12, and 14, Gauron discloses the longitudinal dimension of the insert nut corresponds to a thickness of the carrier, and the groove is circular (figures 13, 14 and 17). Gauron also shows a plurality of grooves along the longitudinal dimension.

With respect to claims 6 and 13, neither Gauron nor Kann disclose the groove to be in the shape of a pentagon. However, Kann discloses that polygonal shapes may be used to secure against turning within the hole. It would have been obvious to one having ordinary skill in the art at the time of the invention to make the grooves in the shape of pentagon in order to provide resistance to torque as the bolt is fastened.

With respect to claims 15 and 18, Gauron, modified as taught by Kann, teaches each gap to be of uniform size and provides an inlet port for plastic injection

With respect to claims 16 and 19, Kann teaches the polygonal shape is sized to be substantially inscribed in the installation hole of the carrier (14 of Kann)

With respect to claims 17 and 20, the combination of Gauron and Kan teaches each gap is defined by adjacent vertices (of Kann) and a segment of the installation hole between the vertices.

With respect to claims 21-24, the combination of Gauron and Kann teaches a polygonal shape defined along, and uniformly sized throughout the entire length of the insert nut. Gauron shows a uniform size shape along the length of the insert nut. Kann teaches the polygonal shape.

(10) Response to Argument

With respect to claims 1 and 8, Appellant argues that there is no reason, suggestion, or motivation to combine the teachings of Gauron and Kann. Appellant reasons that Kann teaches a rivet, and that the insert nut of Gauron is structurally incapable of being riveted. Examiner notes that Kann is not cited for the teaching of a rivet or a riveting operation, but rather for the teaching of a specific shape. Gauron teaches each element of claims 1 and 8, and is identical to Appellant's insert nut, with the exception of a polygonal shape. In Gauron, the insert nut includes circumferentially extending grooves (84, 86, 88) and a plurality of sidewalls (78, 90, 92, for example). The sidewalls define a shape that is flat on opposite sides, and bridge by a rounded portion between the two flat sides. Gauron uses the flat areas to provide for venting or flow of resin (column 1, line 58 – column 2, line 7) when the insert nut is placed in a carrier, to secure the insert in place. The insert nut is secured by a bond formed between the insert nut, resin, and carrier (14; see figure 17). If the bond between the insert nut and carrier were to be over come,

the insert nut would tend to rotate relative to the carrier, which makes insertion and rotation of a threaded fastener therein difficult. Thus, rotation of the insert nut relative to a carrier is undesirable.

Kann teaches an insert nut (11) that is inserted into a round hole carrier plate (14), similar to that of Gauron. Also like Gauron, Kann includes a threaded bore (13) to receive a fastener. Kann shapes the insert nut in the shape of a polygon, and in the illustrated embodiments, uses a heaxagon (see figure 3 and 5; column 3, lines 2-4). Kann continues to explain that by using a hexagonal section, the insert nut member (11) is "firmly held in the plate and also secure against turning" (column 3, lines 27-30). From this, Kann provides an explicit reason and motivation for using a hexagonal section. The flat sides and angles of a polygonal create a torque in reaction to a turning force that resists rotation. One having ordinary skill in the art would look to the teachings of Kann in order to resist rotational motion. By fashioning the sidewalls of Gauron in a polygonal shape, the problem of the insert nut rotating within the carrier is cured. The flat sides of the polygon would act to create a resistive force against the resin and/or carrier in response to a rotational force applied to the insert nut. The rotational force may be applied from inserting a fastener into the threaded bore. This is the same problem Appellant has addressed, and for the same reason provided Kann, Appellant has provided an insert nut with a polygonal shape. Additional benefits to Gauron also arise, in that a polygonal shape used in Gauron provides even more venting area for the resin to flow and also provides a large bond area for the resin against the insert nut.

With respect to claims 2 and 10, Appellant argues that the combination of Gauron and Kann fails to show or suggest an insert nut shaped as a hexagon. Examiner respectfully disagrees. Kann, cited for the teaching of a polygonal shape, to resist turning, explicitly uses a hexagonal shape (column 3, line 4; figure 3). Further appellant argues that such a shape would not resist turning in Gauron because Gauron's insert nut is not riveted. Examiner respectfully disagrees and contends that the use of flat sides, provided by a polygonal shape, resists rotation because the flat sides will provide a reactive torque against turning motion. Gauron, as modified by Kann, essesntially results in a polygonal insert nut fixed in a polygonal hole (formed by the resin around the insert nut). A circular nut in a circular hole may spin freely in the hole if the bond from the surrounding resin is broken. However, a polygonal nut, in a polygonal hole of the same shape will not spin freely even if the bond with the resin is broken.

Appellant also alleges patentability of claims 2 and 10 because they depend from claim 1 and 8, respectively, which Appellant argues to be allowable. For the same reasons cited above in the arguments regarding claims 1 and 8, this argument is not persuasive.

With respect to claims 3 and 9, Appellant argues that the combination of Gauron and Kann fails to show an insert nut in the shape of a pentagon. Examiner respectfully disagrees. Kann discloses that the cross section of member (11) "may be in the form of any polygon" (column 3, lines 3-4). One of ordinary skill in the art would recognize that a pentagon is a polygon, and the benefits of using polygons to resist turning are well known, as taught by Kann, and discussed in the response to Appellant's arguments regarding claims 1, 8, 2, and 10 above.

Appellant also alleges patentability of claims 3 and 9 because they depend from claim 1 and 8, respectively, which Appellant argues to be allowable. For the same reasons cited above in the arguments regarding claims 1 and 8, this argument is not persuasive.

With respect to claims 6 and 13, Appellant argues that the combination of Gauron and Kann fails to show an insert nut with a circumferentially extending groove in a polygonal shape. Examiner respectfully disagrees. The circumferential grooves in Gauron are circular in shape. However, as discussed above in the discussion of claims 1, 8, 2, and 10, Kann teaches a polygonal shape that is beneficial to resist rotation. One of ordinary skill in the art would recognize that such a shape may be applied anywhere within a carrier hole to achieve the desired rotational resistance. Whether the sidewall, the circumferential groove, or booth shaped as a polygonal the identical benefit will result. Appellant admits as much in their specification at page 7, lines 2 and 3, where the reason given for shaping the circumferential groove as a polygon is exactly the same reason given for shaping the sidewalls of the insert nut as a polygon at page 3, lines 17-19. Both result in improved joint strength and increased rotational resistance. Appellant is simply applying known benefits (rotational resistance) of a shape from a known structure (Kann's isnert nut) to another known prior insert nut (of Gauron) for the same reasons explicitly given by the prior art.

Appellant also alleges patentability of claims 6 and 13 because they depend from claim 1 and 8, respectively, which Appellant argues to be allowable. For the same reasons cited above in the arguments regarding claims 1 and 8, this argument is not persuasive.

With respect to claims 21-24, Appellant argues the combination of Gauron and Kann fails to show an insert nut including a polygonal shape substantially defined along an entire length of the insert nut (claims 21 and 23), or which is uniformly sized throughout the length of the insert nut (claims 22 and 24). Examiner respectfully disagrees. Gauron shows an insert nut where the sidewalls of the same shape which are defined along an entire length of the insert nut (see figure 20). Kann teaches the use of a polygonal shape in insert nuts. Gauron, as modified by Kann, would then include polygonal sidewalls defined along the entire length of the insert nut, as required by the claims.

With respect to Appellant's argument that Gauron and Kann fail to show a polygonal shape uniformly sized throughout, examiner respectfully submits that the sidewall portions (78, 90, 92) of Gauron are uniformly sized through the length of the insert nut. Once modified, as taught by Kann, in order to resist turning, the sidewalls will be of a polygonal shape, uniformly sized through. Claims 22 and 24 are directed only the "the polygonal shape" which refers to the shape of the sidewalls provided for in claims 1 and 8. The sidewall portions of Gauron are both uniformly sized and shaped through the entire length of the insert nut. The only difference from Appellant's claimed invention is the shape. Kann cures this deficiency by teaching a polygonal shape. The combination results in uniformly sized and shaped sidewalls (78, 90, 92 of Gauron), along the entire length of the insert nut, in a polygonal shape.

Appellant further states that any modification of Gauron's insert nut results in only the end portion of Gauron being shaped as a polygon. Examiner respectfully disagrees with this conclusion. By forming all of the sidewalls of Gauron as a polygon, venting or flow of the resin is improved, as previously discussed. Additionally, the polygonal section in Kann extends

completely through the carrier plate 14 to achieve the desired result. Examiner contends that one of ordinary skill in the art would apply this teaching to Gauron, and extend the polygonal section completely through the carrier member of Gauron, by modifying all of the sidewalls of Gauron to be polygonal in shape.

Appellant also alleges patentability of claims 21-24 because they depend from claim 1 and 8, respectively, which Appellant argues to be allowable. For the same reasons cited above in the arguments regarding claims 1 and 8, this argument is not persuasive.

Appellant alleges patentability of claims 4, 5, 7, 11, 12, and 14-20 because they depend from claim 1 and 8, which Appellant argues to be allowable. For the same reasons cited above in the arguments regarding claims 1 and 8, this argument is not persuasive.

In conclusion, the use of polygonal shapes to resist rotation is well known as demonstrated and explicitly discussed by Kann. One of ordinary skill in the art would be motivated to apply the teaching of a polygonal shape to known insert nut arrangements to increase rotational resistance.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer. It is noted that the headings for Evidence and Related appeals index is missing. However, the record is clear and it is assumed that Appellant meant to include both appendixes with a statement of "none".

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Michael J. Kyle

Conferees:

Brian Glessner B.G.

Darnell Jayne DJ

BRIAN E. GLESSNER
SUPERVISORY PATENT EXAMINER